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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,089	04/15/2004	Sammy Ming Kit Chau	64032/P015US/10404210	7160

29053 7590 12/23/2008
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EXAMINER	
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ART UNIT	PAPER NUMBER
2617	
MAIL DATE	DELIVERY MODE
12/23/2008	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/825,089
Filing Date: April 15, 2004
Appellant(s): CHAU ET AL.

R. Ross Viguet
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/21/2008 appealing from the Office action mailed 5/29/2008

(1) Real party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after the last non-final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5867785	Averbuch et al.	2-1999
20040058678	DeTorbal	3-2004
5268933	Averbuch	12-1993

20030153316	Noll et al.	8-2003
20020160773	Gresham et al.	10-2002
6243575	Ohyama et al.	5-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 3, 8, 9, 11, 13 and 18 are rejected under 35 U.S.C. as being unpatentable over Averbuch et al. (hereinafter Averbuch) (US 5867785) in view of DeTorbal (US 2004/0058678).

Regarding **claim 1,** Averbuch teaches a method of managing communications associated with a plurality of wireless devices (Col. 4, lines 30-31), comprising: detecting a first access point (stationary base site 109 in Figure 1; Col. 4, lines 8-45);

associating a station of a wireless switch (combinations of items 206 and 200 in Figure 2) with said first access point**;**

routing data between said plurality of wireless devices (Col. 4, lines 19-31; Figure 2) and

said first access point using said first station, detecting a second access point (item 109 in Figure 1;Col. 8, lines 8-11);

associating a station of said wireless switch with said second access point (item 110 in Figure 1; Col. 8, lines 8-11);

monitoring signal strengths of said first and second access points as received by said first and second stations (Col. 5, lines 57-67; Col. 6, lines 1-9); and

switching to routing data between said plurality of wireless devices and said second access point using said second station in response to said monitoring (Col. 8, lines 8-35).

Averbuch did not teach expressly first and second station of a wireless switch. However, DeTorbal teaches in an analogous art, first and second station of a wireless switch (item 22, first station 24 and second station 26 in Figure 2; Paragraph [0021], lines 1-4). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use first and second station of a wireless switch in order to initiate early handover operations for a group of active mobile connections. This modification helps in

improving the likelihood of successful handovers with no dropped calls is increased for mobile radios moving at a high speed and /or together as a group. This is because **the first station of the wireless switch can detect the target base station and also the available resources well in advance.**

Regarding **claim 2**, Averbuch teaches the method of claim 1 further comprising: associating said plurality of wireless devices (Col. 4, lines 30-31) with an access point of a wireless switch (items 202, 203,204 and 205 in Figure 2; Col. 4, lines 19-31).

Regarding **claim 3**, Averbuch teaches all the particulars of the claim except wherein said monitoring comprises: applying a filtering function to received signal strengths. However, DeTorbal teaches in an analogous art, wherein said monitoring comprises: applying a filtering function to received signal strengths (Figure 3; Paragraphs 0033-0034). Therefore, it would be obvious to one of ordinary skill in the art the time of invention to use the method except wherein said monitoring comprises: applying a filtering function to received signal strengths. This modification helps in successfully perform handover and thus improving the performance and reliability.

Regarding **claim 8**, Averbuch teaches the method of claim 1, wherein said wireless switch is disposed within a transportation vehicle (Figure 2; Abstract, lines 3-4).

Regarding **claim 9**, Averbuch teaches a wireless switch system (combinations of items 202,203,204, 206 and 200 in Figure 2) for managing communications of a plurality of wireless devices (Col. 4, lines 30-31; items 207,208 ... 213 in Figure 2), comprising:

an internal access point for managing a wireless local area network (WLAN) that includes said plurality of wireless devices (202,203,204 and 205 in Figure 2);

a station (item 206, integrated into a single station; Col. 4, lines 1-14) for communicating with external access points (items 140.... 171 in Figure 2), and

a packet switch controller ("mobile system controller", item 200 in Figure 2; Col. 4, lines 19-21) for routing data between said plurality of wireless devices and external access points using said plurality of stations, wherein said packet switch controller is operable to switch communications between said plurality of stations in response to signal strengths received from said plurality of access points crossing threshold values (Col. 5, lines 57-67; Col. 6, lines 1-9).

Averbuch did not teach expressly plurality of stations for communicating with external access points. However, DeTorbal teaches in an analogous art, plurality of stations communicating with external access points (item 22, first station 24 and second station 26 in Figure 2; Paragraph [0021], lines 1-4). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use plurality of stations communicating with external access points in order to initiate an early handover operation for a group of active mobile connections. This modification helps in improving the likelihood of successful handovers with no dropped calls is increased for mobile radios moving at a high speed and /or together as a group. This is because the first station of the wireless switch can **detect the target base station and also the available resources well in advance**. 1

Claim 11 is rejected for the same reason as set forth in claim 3.

Regarding **claim 13,** Averbuch teaches a wireless system, comprising:

a plurality of access points (items 202,203 .. 205 in Figure 2), and a wireless switch comprising: a station for communicating with said plurality of access points (Figure 2), an internal access point (any one of items 202,203,204,205 in Figure 2) for managing communication with a plurality of wireless devices (Figure 2); and a packet switch controller (item 200 in Figure 2) for directing data between said plurality of stations and said plurality of wireless devices, wherein said packet switch controller switches between said plurality of stations in response to signal strengths received from said plurality of access points (Col. 5, lines 56-67; Col. 6, lines 1-9).

Averbuch did not teach expressly plurality of stations for communicating with external access points. However, DeTorbal teaches in an analogous art, plurality of stations communicating with external access points (item 22,24 and 26 in Figure 2 ; Paragraph [0021], lines 1-4). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use plurality of stations communicating with external access points in order to initiate early handover operations for a group of active mobile connections.

Regarding **claim 18,** Averbuch further teaches the wireless system of claim 13 wherein said wireless switch is mounted to a transportation vehicle (Figure 2; Abstract, lines 3-4).

Claims 4, 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averbuch et al. (hereinafter Averbuch) (US 5867785) in view of

DeTorbal (US 2004/0058678) and further in view of Averbach (hereinafter Averbuch-2) (US 5268933).

Regarding **claim 4**, Averbuch in view of DeTorbal teaches all the particulars of the claim except maintaining a connection with said second access point by communicating ping packets through said second access point. However, Averbuch-2 teaches in an analogous art, maintaining a connection with said second access point by communicating ping packets through said second access point (Col. 3, lines 1-44). Therefore, it would be obvious to one of ordinary skill in the art the time of invention to maintain a connection with said second access point by communicating ping packets through said second access point. This modification helps in speeding up the synchronization process and thus speeding up the handover process.

Regarding **claims 10 and 17**, Averbuch teaches all the particulars of the claim except 13 wherein said packet switch controller maintains a connection with one of said plurality of access points that is not currently used for data communications by routing ping packets through said one of said plurality of access points. However, Averbuch-2 teaches in an analogous art, wherein said packet switch controller maintains a connection with one of said plurality of access points that is not currently used for data communications by routing ping packets through said one of said plurality of access points (Col. 3, lines 1-44). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use wireless system, wherein said packet switch controller maintains a connection with one of said plurality of access points that is not currently used for data communications by routing ping packets through said one of said plurality

of access points. This modification helps in speeding up the synchronization process and thus speeding up the handover process.

Claims 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averbuch et al. (hereinafter Averbuch) (US 5867785) in view of DeTorbal (US 2004/0058678) and further in view of Noll et al. (hereinafter Noll) (US 2003/0153316).

Regarding **claim 5,** Averbuch teaches said plurality of wireless devices and said wireless switch are moving in a common direction (Figure 2; Col. 8, lines 42-43), the method further comprising: operating a base station associated with said first access point by tracking movement of said plurality of wireless devices (Col. 4, lines 4-5). DeTorbal teaches directional antenna (item 24 in Figure 2). Neither Averbuch nor De Torbal teaches a base station associated with a first access point with a directional antenna. However, Noll teaches in an analogous art, a base station with a directional antenna ("directional antenna", Paragraph [0018], lines 7-8). Therefore, it would be obvious to one of ordinary skill in the art the time of invention to use a directional antenna for a base station associated with a first access point. This modification improves the communication efficiency.

Regarding **claim 6**, Averbuch in view DeTorbal teaches all the particulars of the claim except monitoring received signal strengths associated with respective patterns of antenna elements of said directional antenna; and switching between said patterns in response to monitoring received signal strengths associated with the respective

patterns. However, Noll teaches in an analogous art, monitoring received signal strengths associated with respective patterns of antenna elements of said directional antenna; and switching between said patterns in response to monitoring received signal strengths (paragraph [0018], lines 1-15). Therefore, it would be obvious to one of ordinary skill in the art the time of invention to use the method of monitoring received signal strengths associated with respective patterns of antenna elements of said directional antenna; and switching between said patterns in response to monitoring received signal strengths. This modification improves the communication efficiency.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Averbuch et al. (hereinafter Averbuch) (US 5867785) in view of DeTorbal (US 2004/0058678) and further in view of Gresham et al (hereinafter Gresham) (US 2002/0160773).

Regarding **claim 7,** Averbuch in view of DeTorbal teaches all the particulars of the claim except wherein the packets from the first access point that are associated with transmission control protocol (TCP) sessions. However, Gresham teaches in an analogous art, the wireless switch system wherein the packets from the first access point that are associated with transmission control protocol (TCP) sessions (Paragraph [0099], line 19). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use wireless system, wherein the packets from the first access point that are associated with transmission control protocol (TCP) sessions. This modification helps in accessing Internet through mobile devices.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Averbuch et al. (hereinafter Averbuch) (US 5867785) in view of DeTorbal (US 2004/0058678) and further in view of Ohyama et al. (hereinafter Ohyama) (US 6243575).

Regarding **claim 12,** Averbuch in view of DeTorbal teaches all the particulars of the claim except wherein when said packet switch controller switches communications between a first station to a second station, said switch controller distributes remaining packets received by said first station to said plurality of wireless devices and send acknowledgement packets through said second station. However, Ohyama discloses in an analogous art, wherein when said packet switch controller switches communications between a first station to a second station, said switch controller distributes remaining packets received by said first station to said plurality of wireless devices and send acknowledgement packets through said second station (Col. 5, lines 12-33; Figure 4; Col. 13, lines 40-63). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use wireless system, wherein when said packet switch controller switches communications between a first station to a second station, said switch controller distributes remaining packets received by said first station to said plurality of wireless devices and send acknowledgement packets through said second station. This modification prevents the second access points from sending duplicate packets.

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averbuch et al. (hereinafter Averbuch) (US 5867785) in view of DeTorbal (US

2004/0058678) and further in view of Noll et al. (hereinafter Noll) (US 2003/0153316).

Regarding **claim 14**, Averbuch in view of DeTorbal ("directional antenna" item 24 in Figure 1) teaches all the particulars of the claim except a base station with a directional antenna. However, Noll teaches in an analogous art, directional antenna ("directional antenna", Paragraph [0018], lines 7-8). Therefore, it would be obvious to one of ordinary skill in the art the time of invention to use directional antenna. This modification improves the communication efficiency. Averbuch did teach "iDEN Enhanced Base Transceiver Site" by Motorolla which includes sector antenna (directional antenna).

Regarding **claim 15,** Averbuch in view of Park and further in view of Noll teaches all the particulars of the claim 14. However, Averbach did not teach expressly monitoring signal strengths received from said wireless switch by a plurality of patterns of discrete antenna elements of said directional antenna. Moreover, Noll teaches in an analogous art, monitoring signal strengths received from said wireless switch by a plurality of patterns of discrete antenna elements of said directional antenna (paragraph [0018], lines 1-15). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to monitor signal strengths received from said wireless switch by a plurality of patterns of discrete antenna elements of said directional antenna. This modification improves the communication efficiency.

Regarding **claim 16,** Averbuch in view of Park and further in view of Noll teaches all the particulars of the claim 15. However, Averbuch did not teach expressly wherein

said controller of said base station switches between said plurality of patterns in response to said monitoring. Moreover, Noll teaches in an analogous art, wherein said controller of said base station switches between said plurality of patterns in response to said monitoring (paragraph [0018], lines 1-15). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the wireless system wherein said controller of said base station switches between said plurality of patterns in response to said monitoring.

(10) Response to Argument

A. Rejection of claims 1,2,3,8,9,11,13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averbuch in view of de Torbal

1. The Independent Claims

a. Claim 1

Appellant argues that the combination of Averbuch and deTorbal does not teach associating a station of a wireless switch with said first access point ... routing data between said plurality of devices and said first access point using said first station ...associating a second station of said wireless switch with said second access point ...monitoring signal strengths of said first and second access points as received by said first and second stations ... switching to routing data between said plurality of wireless devices and second access point using said second station in response to said monitoring.

Examiner respectfully disagrees. Averbuch teaches method comprising: associating a station of a wireless switch (item 206 in Fig. 2 reads on station and combinations of items 206 and 200 and 231 in Figure 2 read on wireless switch) with said first access point (stationary base site 109 in Figure 1);

(The stationary system controller transmits the resource allocation to the mobile system controller 200 over control channel 168 via a stationary base site 109 and base station 206. Upon receiving the resource allocation from the stationary system controller 101, the mobile system controller maps the allocated resources 14-149 to a local set of communication resources (e.g., 220-229) for use by the communication units located within the common carrier transportation device 115", **col. 4, lines 63-67 and col. 5, lines 1-3)**

routing data between said plurality of wireless devices (items 207, 208, 209,203,210.. read on wireless devices; Figure 2) and said first access point using said station ("the stationary base site (109) transmits the communication to mobile system controller 200 ... mobile system controller provides the communication to appropriate serving mobile base site 202 and instructs the serving mobile site to transmit the communication to the mobile communication unit 207", Col. 7, lines 31-49).

associating the station of said wireless switch with said second access point

(The stationary system controller 101 then conveys the resource allocations to the mobile system controller 200 via a control channel (e.g. 170 and 171) to thereby handoff all ongoing communications between mobile system controller 200 and the stationary system controller 101 .... from the target base site) to complete the group

handoff, Col. 9, lines 21-30). Note: **Mobile system controller reads on wireless switch** and items 170 and 171 correspond to the signal from the target stationary base sites (**reads on second access point**). Therefore, the phrase "resource allocations to the mobile system controller 200 via a control channel (e.g. 170 and 171)" reads on associating the station of said wireless switch with said second access point.

switching to routing data between said plurality of wireless devices and said second access point using said station in response to said monitoring ("handoff of the mobile system controller 200 from stationary base site to stationary base site", Col. 10, lines 62-64).

Averbuch did not teach expressly first and second station of a wireless switch.

DeTorbal teaches first and second station of a wireless switch ("the vehicle 20 includes on-board radio unit 26 coupled to an omni-directional antenna for communications with base station A and to a directional antenna 24 for communications with base station B", Paragraph [0021]). DeTorbal further teaches associating the second station of said wireless switch with said second access point ("the handover controller 50 sends a handover notification message to the target base station B", Paragraph [0039]). The modifications for the wireless switch of Averbuch is for replacing the external station 206 (single antenna) with two separate wireless stations (two separate antennas as taught by DeTorbal) in order to initiate early handover operations for a group of active mobile connections. This modification helps in improving the likelihood of successful handovers with no dropped calls is increased for mobile radios moving at a high speed and /or together as a group. This is because the first station of

the wireless switch can detect the target base station and also the available resources well in advance.

Applicant further argues that Averbuch does not teach a first and second station, it also does not teach the steps require the first and second stations being used in particular ways.

The first and second stations are used to associate/disassociate with the external base stations and they are external antennas. Averbuch has one external antenna to communicate with the external stationary base sites. However, DeTorbal has two stations (antennas) to communicate with two stationary base sites.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

DeTorbal teaches (Paragraph [0024]), "a high directional antenna, read as a first station, used to communicate with the current base station A is coupled to the radio circuitry 49. A high gain, directional antenna 24, read as a second station, used to communicate with the target base station B is also coupled to the radio circuitry. The OBRU controller 48 implements traditional mobile radio functions as well as the functions associated with handover monitoring, notification and preparation". Therefore,

the controller performs selective communication with the external base stations through the two stations (two antennas) with a single controller.

In response to appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the appellant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

b. Claim 9

Appellant argues that deTorbal does not teach a wireless switch with first and second stations. The on-board unit does not operate as a wireless switch. Instead, the on-board unit merely notifies a base station of an incoming handover. Therefore, to modify Averbuch with deTorbal is to improperly piece together isolated disclosures of the applied art in an attempt to render claim 9 obvious.

Examiner respectfully disagrees.

DeTorbal teaches (Paragraph [0024]), "a high directional antenna used to communicate with the current base station A is coupled to the radio circuitry 49. A high gain, directional antenna 24 used to communicate with the target base station B is also coupled to the radio circuitry. The OBRU controller 48, read as a wireless switch, implements traditional mobile radio functions as well as the functions associated with

handover monitoring, notification and preparation". Therefore, the controller performs selective communication with the external base stations through the two stations (two antennas) with a single controller.

The aspect of separate first and second wireless stations is for the external communication with the base stations. Both the external first and second wireless stations are communicating with the mobile stations through **a single access point (item 202) internally (within the train item 101)**.

De Torbal teaches a first and second and second wireless stations (item 24 and item 22 in Figure 2, first wireless station 22 communicating with the base station 12 and second wireless station 24, communicating with base station 14). The modifications for the wireless switch of Averbuch is for replacing the external station 206 with two separate wireless stations (as taught by DeTorbal) in order to initiate early handover operations for a group of active mobile connections. This modification helps in improving the likelihood of successful handovers with no dropped calls is increased for mobile radios moving at a high speed and /or together as a group. This is because the first station of the wireless switch can detect the target base station and also the available resources well in advance.

Appellant argues that "modify Averbuch with deTorbal is improperly piece together isolated disclosures of the applied art in order to render claim 9 obvious.

Averbuch teaches single controller communicating with the external stationary base sites (serving and target base stations) through a single station (antenna). DeTorbal teaches single controller selectively communicating with external base sites

(antenna 22 for serving base station and antenna 24 for the target base station, Figure 2) through a single controller.

Therefore, modifying the single station (antenna) of Averbuch by two stations (antennas) with the other teachings of Averbuch one can have the wireless switch as claimed.

c. Claim 13

Appellant argues that Averbuch does not even mention or suggest that measured signal strength is used for switching between stations.

Examiner respectfully disagrees. Averbuch clearly teaches (Col. 10, lines 16),"when the common carrier transportation device is handed off from stationary base site 111 to stationary base site 112, and the **received signal quality of the control signal** transmitted from stationary base site 102 is above threshold **the mobile system controller selects a new set of communication resources**.

Appellant argues that Appellee has not shown that Averbuch teaches the limitations of claim 13 requiring a packet switch controller that switches between stations in response to signal strengths.

Examiner respectfully disagrees. Averbuch in view of deTorbal (having two stations selectively communicating with the serving and target base stations) teaches the limitations of claim 13 requiring a packet switch controller (Averbuch: "mobile system controller selects a new set of communication resources", Col. 10, lines 5-15) that switches between stations (Averbuch: "handed off from stationary base station 111 to stationary base station 112", col. 5, lines 5-15, DeTorbal: item 22 and 24 in Figure 2,

Paragraph [0024]) in response to signal strengths (Averbuch: "received signal quality of the control signal form stationary base site is above threshold", Col. 10, lines 5-15, DeTorbal: Paragraph [0039]). Therefore, the combination of the references teaches the claimed limitations.

2. Dependent claims 2,3,8,11 and 18

In response to appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the aspect of separate first and second wireless stations is for the external communication with the base stations. Both the external first and second wireless stations are communicating with the mobile stations through **a single access point (item 202) internally (within the train item 101)**.

De Tobal teaches a first and second and second wireless stations (item 24 and item 22 in Figure 2, first wireless station 22 communicating with the base station 12 and second wireless station 24, communicating with base station 14). The modifications for the wireless switch of Averbuch is for replacing the external station 206 with two separate wireless stations (as taught by DeTorbal) in order to initiate early handover operations for a group of active mobile connections. This modification helps in

improving the likelihood of successful handovers with no dropped calls is increased for mobile radios moving at a high speed and /or together as a group. This is because the first station of the wireless switch can detect the target base station and also the available resources well in advance. Thus, the combination of the references teaches the claimed limitations.

B. Rejection of claims 4,10 and 17 under 35 U.S.C 103(a) as being unpatentable over Averbuch in view of deTorbal and further in view of Averbuch-2

Appellant argues that using dummy packets for synchronizing does not teach the limitation of claim 4 requiring, "maintaining a connection with said second access point by communicating ping packets through a second access point".

Averbuch-2 teaches in an analogous art, maintaining a connection with said second access point by communicating ping packets through said second access point ("dummy packets and monitoring base station arrival time message", Col. 3, lines 16-44). Synchronization is required to maintain connection with a new access point (second access point). This modification helps in speeding up the synchronization process and thus speeding up the handover process.

C. Rejection of Claims 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averbuch in view of DeTorbal and further in view of Noll

Reference by Noll is not relied upon for the claim 1.

Claim 5

Appellent argues that the combination does not teach "operating a base station associated with said first access point by tracking movement of said plurality of devices and said wireless switch using a directional antenna".

Averbauch teaches operating a base station associated with said first access point by tracking movement of said plurality of devices and said wireless switch (the base station, switch and wireless devices are in communication and therefore the access point is tracking the movement of said plurality of devices and said wireless switch is part of claim 1). Noll teaches a base station with a directional antenna ("directional antenna", Paragraph [0018], lines 7-8). Therefore, it would be obvious to one of ordinary skill in the art the time of invention to use a directional antenna for a base station associated with a first access point. This modification improves the communication efficiency.

b. Claim 6

Appellent argues that appelle has not shown that Noll teaches "monitoring received signal strengths associated with respective patterns of antenna elements of said directional antenna; and switching between said patterns in response to monitoring received signal strengths associated with the respective patterns.

Noll teaches monitoring received signal strengths (switching is performed based on monitoring signal strength, Paragraph [0029]) associated with respective patterns of antenna elements of said directional antenna (beam patterns in Figures 2-3 are related to signal strength); and switching between said patterns in response to monitoring received signal strengths ("ground link communications with a mobile transceiver unit

can be switched from one antenna element to another as the mobile communications unit moves from a region covered by one antenna element to a region covered by another antenna element", Paragraph [0029], "directional antenna pattern", Paragraph [0018]).

D. Rejection of claim 7 under 35 U.S.C. 103(a) as being unpatentable over Averbuch in view of DeTorbal and further in view of Gresham

Appellant argues that appellee has not shown switching that comprises "receiving packets from the first access point that are associated with transmission control protocol (TCP) sessions and sending acknowledgement packets in response to said receiving using said second station"

Gresham teaches wireless switch system wherein the packets from the first access point that are associated with transmission control protocol (TCP) sessions (Paragraph [0099], line 19); and sending acknowledgement packets in response to said receiving using said second station (Paragraph [0121]). These procedures are part of the TCP/IP standard.

E. Rejection of claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Averbuch in view of DeTorbal and further in view of Ohyama

Appellant argues that Ohyama is insufficient to teach the limitation of claim 12 requiring when said packet switch controller switches communications between a first station to a second station, said switch controller distributes remaining packets received by said first station to said plurality of wireless devices and send acknowledgement packets through said second station"

Claim interpretation:

said packet switch controller switches communications between a first station to a second station,

said switch controller distributes remaining packets received by said first station (down link from external base station to the first station and further to the plurality of wireless devices) to said plurality of wireless devices (switching does not influence these packets since the packets are already received at the first station)

send acknowledgement packets through said second station [acknowledgement packets are received (in the uplink direction from the mobile devices to the external base station) only after transmitting the remaining packets to the said plurality of wireless devices, and therefore, they are like a new uplink transmission form the mobile devices; therefore, there exists a state when there is no remaining packet received form the first station at the wireless switch and the packet switch controller switches communication between first station to second station].

Therefore, the claim is essentially transmitting the packets already in the switch to the mobile devices in the down link,

performing switching and receiving the packets from the mobile devices in the uplink direction.

Ohyama teaches the limitation of claim 12 requiring when said packet switch controller switches communications between a first station to a second station (Ohyama switches between control channel l (reads on first station) and m (reads on second station); Note: l and m are antennas as shown in Figure 4) , said switch controller

distributes remaining packets received by said first station to said plurality of wireless devices ("mobile base station maintains the call of the subscriber terminal until it completes", Col. 5, lines 24-25) and send acknowledgement packets through said second station (new call with existing base station 11 through a control channel m (reads on second station)) .

F. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averbuch in view of DeTorbal and further in view of Noll

F. Rejection of claims 14-16

a. claim 14

Appellant argues that Appellee's picking and choosing isolated disclosures form Averbuch, deTorbal and Noll without reference to claim as a whole does not render the claim obvious. Dependent Claim 14 is related to external base station and is not the intelligent wireless switch and is further related to switching the antennal elements of the base station as the wireless station is in motion in order to enhance the gain.

Claim 14 is related to base station with a directional antenna, said base station comprising a controller that tracks movement of said wireless switch using said directional antenna through a coverage area of said one of said plurality of access points.

Noll teaches base station with a directional antenna ("switched beam antenna array", Paragraph [0028]; plurality of antenna elements form the antenna array for use by the base station .. to produce directional antenna pattern; Paragraph [0018], also figures 1-3), said base station comprising a controller that tracks movement of said

wireless switch using said directional antenna through a coverage area of said one of said plurality of access points ("ground link communications with a mobile transceiver unit can be switched from one antenna element to another as the mobile communications unit moves from a region covered by one antenna element to a region covered by another antenna element", Paragraph [0029]).

b. Claims 15 and 16

Claims 15 and 16 require that "said controller of said base station monitors signal strengths received form said wireless switch by a plurality of patterns of discrete antenna elements of said directional antenna". Appellent argues that no such teaching in the cited portion of Noll. The rejection of the claim based on the whole publication and therefore, appellant could find further clarification in other portions of the Noll publication.

Noll teaches "said controller of said base station (item 102 in Figure 1) monitors ("ground link communications with a mobile transceiver unit can be switched from one antenna element to another as the mobile communications unit moves from a region covered by one antenna element to a region covered by another antenna element",(Paragraph [0029]) signal strengths received form said wireless switch by a plurality of patterns of discrete antenna elements of said directional antenna (figure 2 shows plurality of patterns of discrete antenna elements; antenna gains are related to signal strength).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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